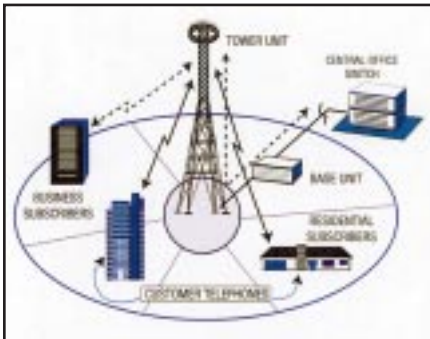


## THE WIRELESS FUTURE IS—GUINEA?

*A fixed wireless telephone network can help telecommunications companies reduce infrastructure costs in rural areas of developing countries.*



■ Glynn Scientific's wireless telephone network (pictured above) can serve rural areas of any size up to 11,300 square miles.

Despite technology advances, tens of millions of people in developing countries have little or no access to basic telephone services. One-quarter of the world's population of 5.9 billion lives in countries where there is less than one phone line for every 100 people, which the International Telecommunications Union, a United Nations agency, defines as "minimum access." In countries like Afghanistan, Guinea, and Somalia, there is just one telephone for every 500 people.

In developing countries, roughly two-thirds of the population lives in rural areas, making it costly for telecommunications companies to justify their infrastructure investment. In these countries, the cost to connect each subscriber could easily surpass \$1,000, nearly double the cost in more developed nations.

Glynn Scientific, Inc. (GSI; Annapolis, MD), is creating a new wireless network technology called Towerphone™ that may reduce new subscriber connection costs to as low as \$200. By combining an innovative communications signaling technology with fixed towers, this network technology can provide low-cost, high-quality telephone and data services to more than 1 million subscribers. Single-tower Towerphone networks can serve areas of any size up to approximately 11,300 square miles. Service will be provided using low-cost subscriber phones.

**Bandwidth economy.** The key to Towerphone is its communications signaling technology called convolutional ambiguity multiple access (CAMA), which offers several advantages in multiple-access telecommunications environments. CAMA can permanently assign unique codes to all subscribers, reducing the amount of bandwidth consumed in the call set-up process. It also offers acceptable co-channel interference performance without network-wide synchronization—a major simplification in network design. GSI developed CAMA while working on advanced phased-array radar technology for BMDO's Arrow and Corps Surface-to-Air Missile projects and on other defense projects.

Towerphone will be attractive to telephone companies looking to break into emerging telecommunications markets in developing countries around the globe. "With a projected subscriber connection cost of \$200, Towerphone will minimize infrastructure outlay and help bring in profits sooner for telecommunications companies," says Tom Fullerton, GSI's vice president of business

development. "You won't get this level of pricing with cellular or very small aperture satellite terminal (VSAT) technology. Cellular pundits say a \$500 subscriber connection cost is possible within the next few years. And the current subscriber connection cost for VSAT reaches between \$3,000 and \$5,000."

Mr. Fullerton also points out that Towerphone requires less infrastructure than cellular networks. Capable of covering the same area as a Class A television station, Towerphone requires only one fixed tower, while cellular service requires "a whole bunch." The television station reference is appropriate because Towerphone will use existing television transmission towers for mounting equipment wherever possible. In addition, businesses and homes will not need any huge dishes or bulky equipment; the antenna will be a small, flat plate that can be easily attached to the side of a building.

**On the move.** GSI has developed an in-depth business plan for bringing Towerphone to market. With the assistance of an international investment banking advisory team, the company is currently seeking financing to begin product development. It is seeking \$8 million to install and test a 1,500-subscriber beta-site network in the United States or abroad.

Further leveraging BMDO-related technology, GSI has spun off a new venture company called NetSat28. In May 1997, NetSat28 received a Federal Communications Commission license to develop and launch a communications satellite to operate in the K and Ka microwave bands, averaging 28 gigahertz in uplink carrier frequency. The geostationary satellite will enable coast-to-coast, two-way communications at conventional T1 network data access rates, or 1.5 megabits per second. Based on patented optical switching technology, NetSat28 could provide as many as 175,000 two-way links simultaneously, offering speedier access to the information superhighway.

To date, the NetSat28 team has invested \$1 million of internal funds to form NetSat28, secure the Ka-band license, and continue technical development at GSI. With the satellite's launch date set for 2002 or 2003, the company is exploring relationships that will exploit this exciting capacity for both business and home use. NetSat28 seeks content and service providers who could also benefit from this network infrastructure.

■ For more information, contact Tom Fullerton via telephone at (410) 268-6981 or via E-mail at [tfullerton@glynn-scientific.com](mailto:tfullerton@glynn-scientific.com).



#### What Does It Mean to You?

Towerphone will allow Americans to communicate with people in developing countries (and vice versa) as easily as making a telephone call in the United States.



#### What Does It Mean to Our Nation?

New international companies anchored in the United States can be formed to market Towerphone technology to emerging telecommunications businesses in developing countries around the world.

#### Tech Trivia

When Alexander Graham Bell died on August 4, 1922, what happened later that day?

- A. Millions of phones went dead.
- B. He was buried holding a telephone.
- C. His wife permanently removed all telephones from their home.
- D. His native country Canada commissioned a statue to be built in his honor.

For the answer, see page 72.